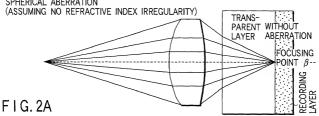
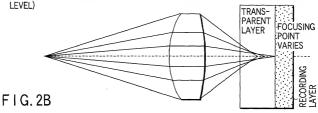


FIG. 1D

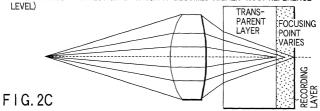
STATE WHERE FOCUS IS ATTAINED ON RECORDING LAYER WITH TRANSPARENT LAYER THICKNESS OF REFERENCE VALUE BY USING OPTICAL SYSTEM WITHOUT SPHERICAL ABERRATION



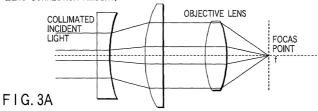
STATE WHERE ABERRATION OCCURS WHEN THICKNESS OF TRANSPARENT LAYER VARIES IN DIRECTION IN WHICH IT BECOMES SMALLER THAN REFERENCE VALUE (THE SAME APPLIES TO CASE WHERE REFRACTIVE INDEX OF TRANSPARENT LAYER VARIES IN DIRECTION IN WHICH IT BECOMES LOWER THAN REFERENCE



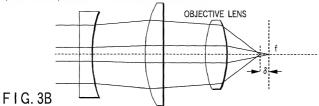
STATE WHERE ABERRATION OCCURS WHEN THICKNESS OF TRANSPARENT LAYER VARIES IN DIRECTION IN WHICH IT BECOMES LARGER THAN REFERENCE VALUE (THE SAME APPLIES TO CASE WHERE REFRACTIVE INDEX OF TRANSPARENT LAYER VARIES IN DIRECTION IN WHICH IT BECOMES HIGHER THAN REFERENCE LEVEL)



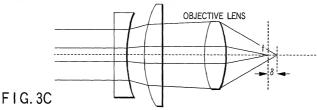
STATE WHERE FOCUS IS ADJUSTED WHEN PARALLEL LIGHT IS INCIDENT ON OBJECTIVE LENS WITHOUT ANY THICKNESS IRREGULARITY (REFRACTIVE INDEX IRREGULARITY) OF TRANSPARENT LAYER (ZERO CORRECTION AMOUNT)



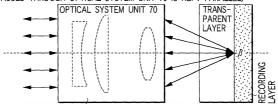
STATE WHERE LIGHT INCIDENT ON OBJECTIVE LENS BECOMES NONPARALLEL (CONVERGENT) OWING TO THICKNESS CORRECTION



STATE WHERE LIGHT INCIDENT ON OBJECTIVE LENS BECOMES NONPARALLEL (DIVERGENT) OWING TO THICKNESS CORRECTION

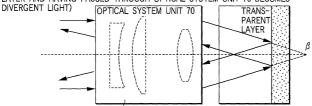


IN CASE WHERE FOCUSING POINT β SET BY OBJECTIVE LENS COINCIDES WITH POSITION ON RECORDING LAYER (LIGHT REFLECTED BY RECORDING LAYER AND HAVING PASSED THROUGH OPTICAL SYSTEM UNIT 70 IS KEPT PARALLEL)



F I G. 4A OBJECTIVE LENS OPTICAL SYSTEM+THICKNESS IRREGULARITY (REFRACTIVE INDEX IRREGULARITY) CORRECTION OPTICAL SYSTEM

IN CASE WHERE FOCUSING POINT β SET BY OBJECTIVE LENS IS LOCATED BEHIND POSITION ON RECORDING LAYER (LIGHT REFLECTED BY RECORDING LAYER AND HAVING PASSED THROUGH OPTICAL SYSTEM UNIT 70 BECOMES



F I G. 4B OBJECTIVE LENS OPTICAL SYSTEM+THICKNESS IRREGULARITY (REFRACTIVE INDEX IRREGULARITY) CORRECTION OPTICAL SYSTEM

IN CASE WHERE FOCUSING POINT β SET BY OBJECTIVE LENS IS LOCATED BEFORE POSITION ON RECORDING LAYER (LIGHT REFLECTED BY RECORDING LAYER AND HAVING PASSED THROUGH OPTICAL SYSTEM UNIT 70 BECOMES

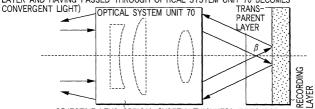


FIG. 4C OBJECTIVE LENS OPTICAL SYSTEM+THICKNESS IRREGULARITY (REFRACTIVE INDEX IRREGULARITY) CORRECTION OPTICAL SYSTEM

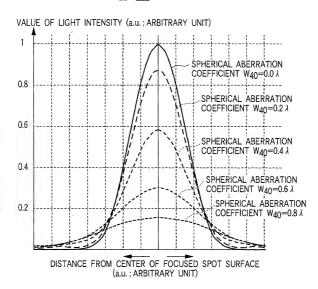
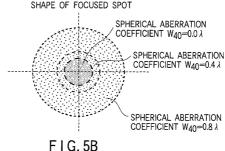
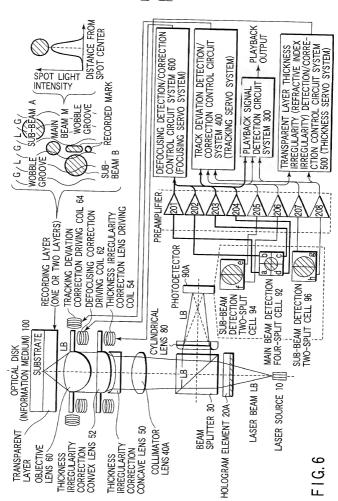
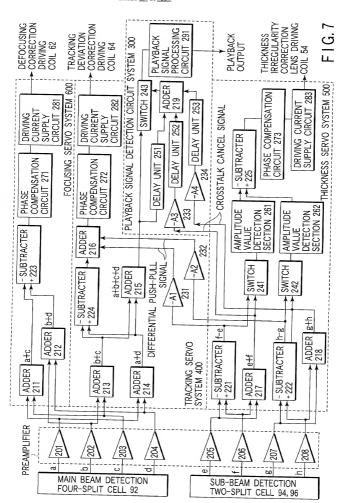


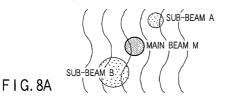
FIG.5A

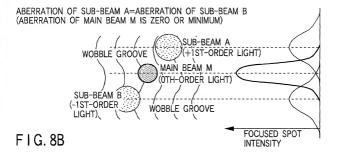




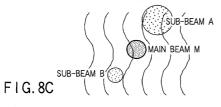


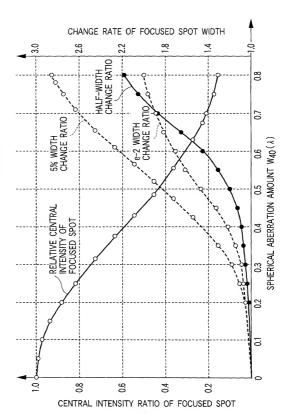
SPOT SIZE OF SUB-BEAM A DECREASES, AND SPOT SIZE OF SUB-BEAM B INCREASES DUE TO THICKNESS IRREGULARITY



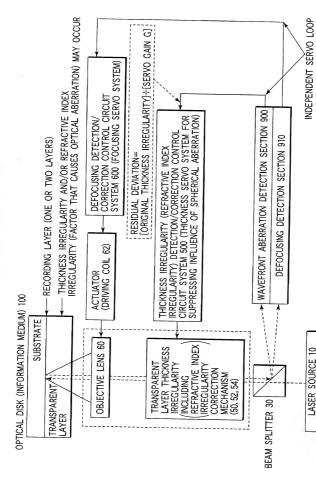


SPOT SIZE OF SUB-BEAM A INCREASES, AND SPOT SIZE OF SUB-BEAM B DECREASES DUE TO THICKNESS IRREGULARITY





F1G.9



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F1G. 10

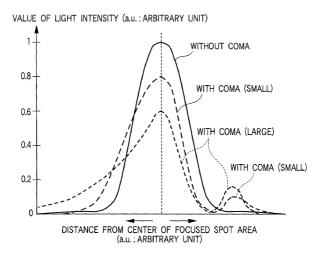


FIG. 11A

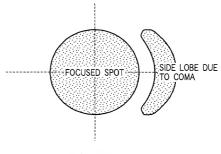
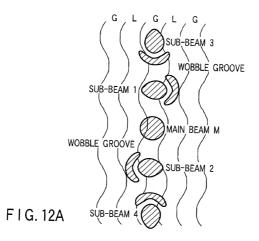
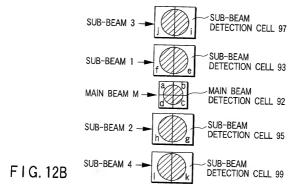


FIG. 11B





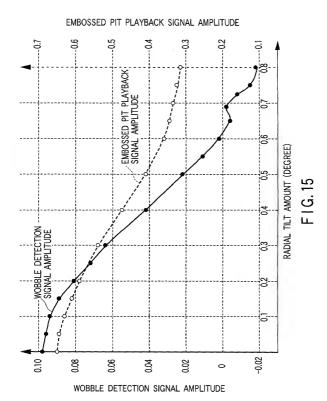
F1G. 13

MAIN BEAM DETECTION

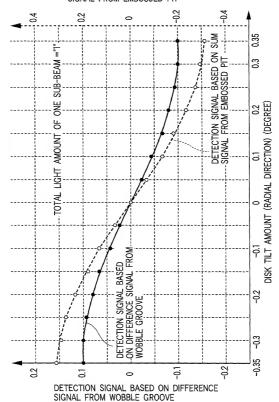
LASER BEAM LB\ LASER SOURCE 10 CELL 92

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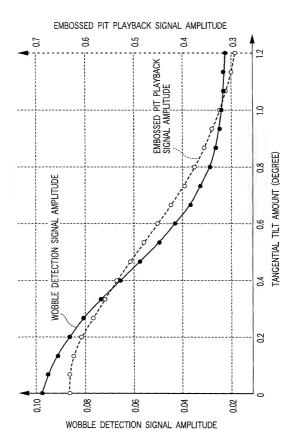
F1G.14



DETECTION SIGNAL BASED ON SUM SIGNAL FROM EMBOSSED PIT



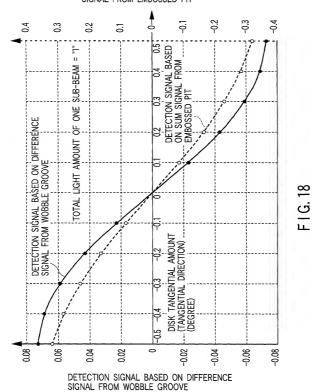
F1G. 16



F1G.17

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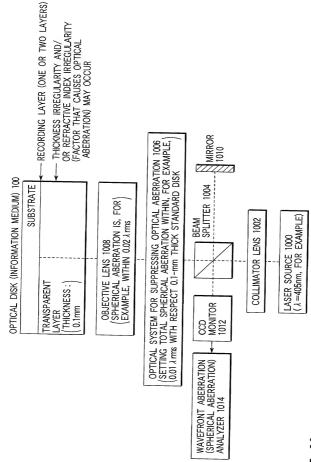
DETECTION SIGNAL BASED ON SUM SIGNAL FROM EMBOSSED PIT



OPTICAL DISK (INFORMATION MEDIUM) 100

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FIG. 19



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FIG. 20

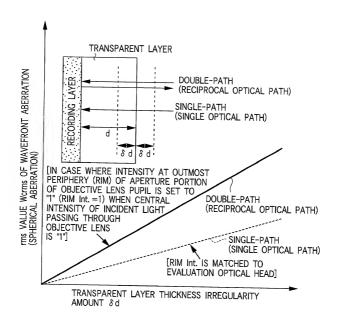
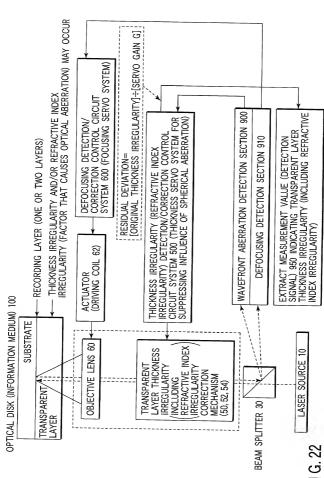


FIG. 21

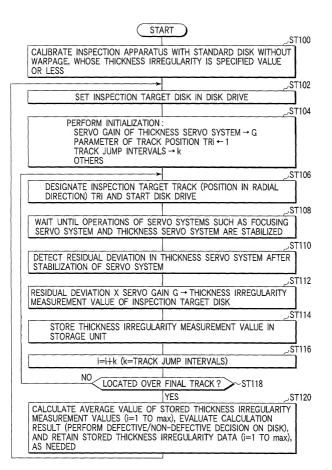
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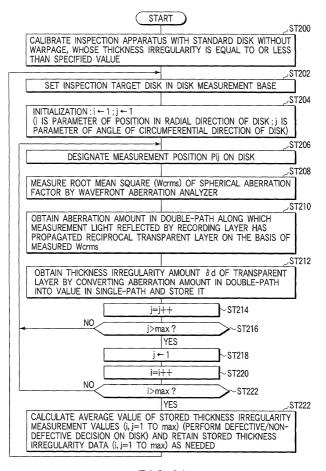
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F1G. 22





START JST300 CALIBRATE INSPECTION APPARATUS WITH STANDARD DISK WITHOUT WARPAGE, WHOSE THICKNESS IRREGULARITY IS EQUAL TO OR LESS THAN SPECIFIED VALUE (MEASURE RELATIONSHIP BETWEEN RADIAL TILT/TANGENTIAL TILT AND CHANGE IN WOBBLE SIGNAL AMPLITUDE OR CHANGE IN DIFFERENCE SIGNAL, IN ADVANCE, FROM CHANGE IN WOBBLE SIGNAL AMPLITUDE OR CHANGE IN DIFFERENCE SIGNAL WHEN KNOWN RADIAL TILT/TANGENTIAL TILT IS/ARE GIVEN, AND STORE MEASURED RELATIONSHIP) ST302 SET INSPECTION TARGET DISK IN DISK DRIVE ST304 PERFORM INITIAL IZATION : SERVO GAIN OF THICKNESS SERVO SYSTEM → G PARAMETER OF TRACK POSITION TRI ← 1 TRACK JUMP INTERVALS → k **OTHERS** ∠ST306 DESIGNATE INSPECTION TARGET TRACK (POSITION IN RADIAL DIRECTION) TRI AND START DISK DRIVE ST308 WAIT UNTIL OPERATIONS OF SERVO SYSTEMS SUCH AS FOCUSING SERVO SYSTEM AND THICKNESS SERVO SYSTEM ARE STABILIZED ST310 ACQUIRE DATA (THICKNESS IRREGULARITY AND THE LIKE) CORRESPONDING TO SPHERICAL ABERRATION OF TRANSPARENT LAYER OF INSPECTION TARGET DISK FROM RESIDUAL DEVIATION IN THICKNESS SERVO CONTROL AFTER STABILIZATION OF SERVO SYSTEM, AND STORE DATA ST312 ACQUIRE DATA (TILT AMOUNT AND THE LIKE) CORRESPONDING TO COMA IN RADIAL DIRECTION AND TANGENTIAL DIRECTION OF INSPECTION TARGET DISK FROM CHANGE IN WOBBLE DETECTION SIGNAL AMPLITUDE (OR CHANGE IN DIFFERENCE SIGNAL) IN TILT SERVO CONTROL (RADIAL & TANGENTIAL), AND STORE DATA ST314 i=i+k (k=TRACK JUMP INTERVALS) NO LOCATED OVER FINAL TRACK?

EVALUATE/RETAIN STORED DATA CORRESPONDING TO SPHERICAL ABERRATION (i=1 TO max): EVALUATE/RETAIN STORED DATA

CORRESPONDING TO COMA (i=1 TO max)

YES

JST318

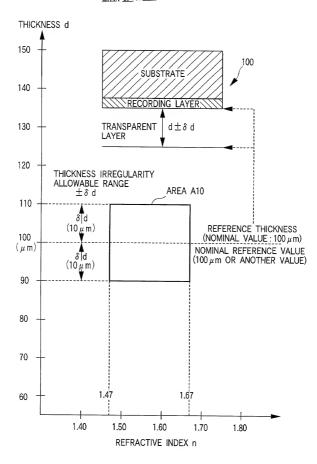


FIG. 26

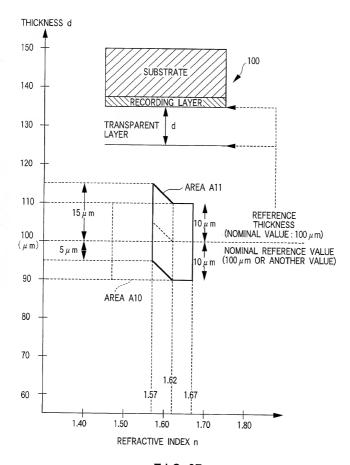


FIG. 27

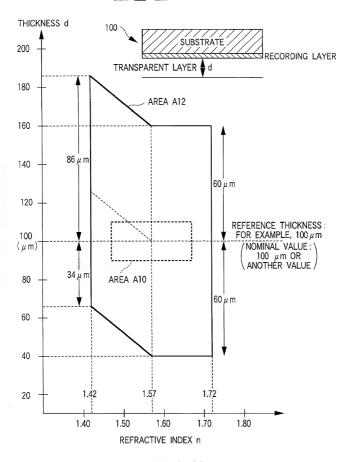
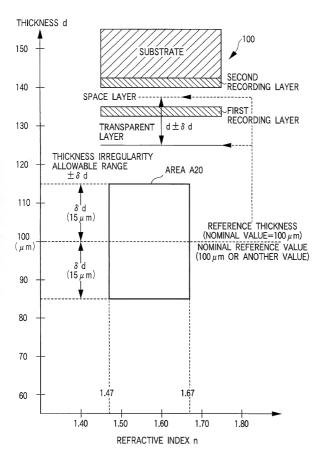


FIG. 28

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A Sheet

1

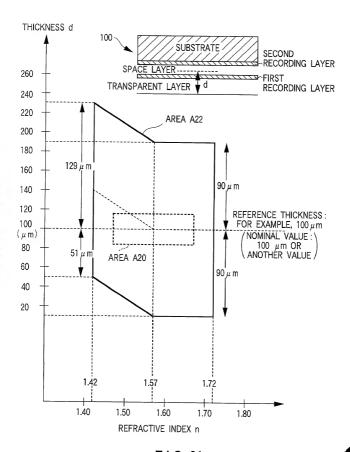
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A 100 CO 100 CO

FIG. 29

The second secon

FIG. 30



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FIG. 31